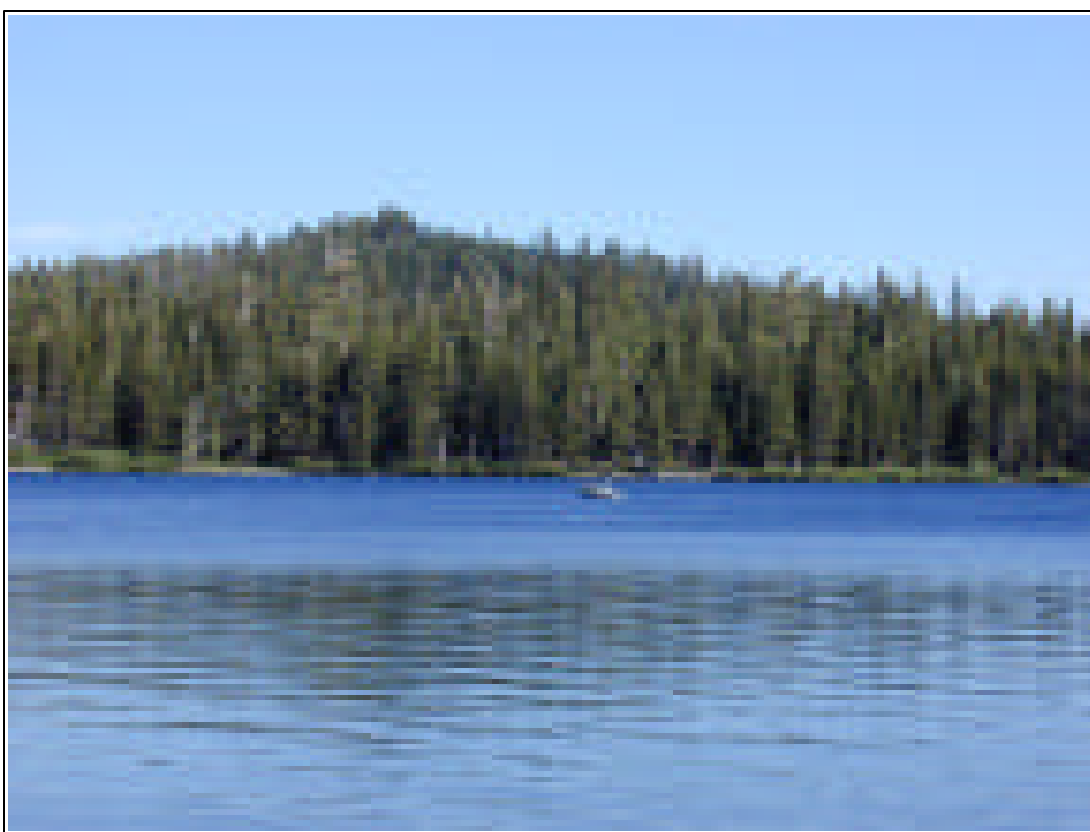


Gold Lake Boat Launching Facility \$245,000 Grant

*Feasibility Report
(January 2000)*



**State of California
The Resources Agency
DEPARTMENT OF BOATING AND WATERWAYS**

GENERAL DESCRIPTION

Grant Applicant

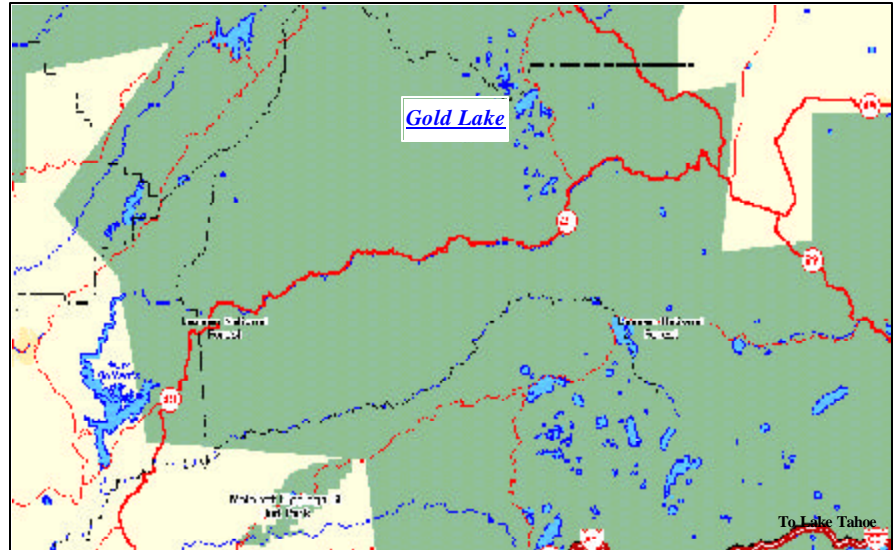
The grant applicant for this project is the United States Department of Agriculture (USDA) Forest Service.

Project Identification

The proposed project will improve the existing boat launching facility at Gold Lake.

Project Location

Gold Lake is located in the Lakes Basin Recreation Area in the Plumas National Forest in Sierra County. Gold Lake is 40 miles north of Lake Tahoe, 75 miles northwest of the Reno metropolitan area, a two to three hour drive from the Sacramento metropolitan area, and a four to five hour drive from the San Francisco Bay area.



Access to Project

Gold Lake is accessed by the Gold Lake Highway, which is a dual county (Plumas and Sierra Counties) two-lane paved road. Gold Lake Highway is accessible from the north by State Highways 70 and 89, and from the south by State Highway 49. Access is seasonal because Gold Lake Highway is not plowed during the winter.



Area Description

The Lakes Basin Recreation Area (LBRA) was established by the Secretary of Agriculture in 1926, requiring recreation to be the primary management objective for the area, which is administered by the U.S. Forest Service. A market analysis survey conducted at the LBRA indicates that users (during the summer months) originate from the following areas: 46 percent Sacramento Valley/San Francisco Bay Area; 20 percent Reno/Tahoe Area; 23 percent local area customers; and 11 percent 'other area' customers.

Gold Lake is the largest of 20 lakes in the area. The lake is unique in that it is the only lake in the LBRA with a boat ramp and dock and no motor size or speed restrictions, which allows for larger boats and water skiing. Other existing boat launching facilities in the area are: Lower Sardine Lake, which has a maximum speed limit of five miles per hour, and is limited to small motors; Packer Lake and Snag Lake which have unimproved car top launches; and upper Salmon Lake which has a gravel launch and dock operated by a



*Gold Lake
boat ramp*

Creek throughout the summer. Repairs to the rock face of the dam were effected in 1984 by the U.S. Forest Service, which owns the dam. The Graegle Land and Water Company is responsible for maintenance of the dam.

The existing boat launching facility at Gold Lake was installed in 1983 using a grant from the Department of Boating and Waterways, and includes: a two-lane concrete ramp approximately 35 feet in length with concrete planks placed at the end of the ramp to extend it further (total length is 60 feet); a boarding float; a parking lot with 15 vehicle/trailer, 12 pull-through, and seven single parking spaces (two of the single spaces are barrier free); a picnic area; and a 2-unit vault toilet building. Other Gold Lake facilities include: an equestrian resort operated under a special use permit; a picnic area with a car top launch and vault toilet; a 4 X 4 camp; and over 60 dispersed camping sites.



Existing restroom

private resort under special use permit. Other facilities in the LBRA include: one 24-unit campground; one group campground; 30 miles of trails; and three resorts operating under special-use permits. The managed season at Gold Lake is from approximately May 15 to October 15, due to snow.

Gold Lake is approximately 500 surface acres at full pool, with a maximum depth of 72 feet and an elevation of 6,407 feet. The lake's first dam was built at the outlet of Frazier Creek in 1858. The current structure is a Masonry rubble dam built by the California Department of Fish and Game in 1953 for maintenance of water flow into Frazier



Existing parking lot

The primary recreation activities at Gold Lake are boating, water skiing, wind surfing, sailing, fishing, swimming, camping, hiking, horseback riding, and picnicking.

Previous Commission Action

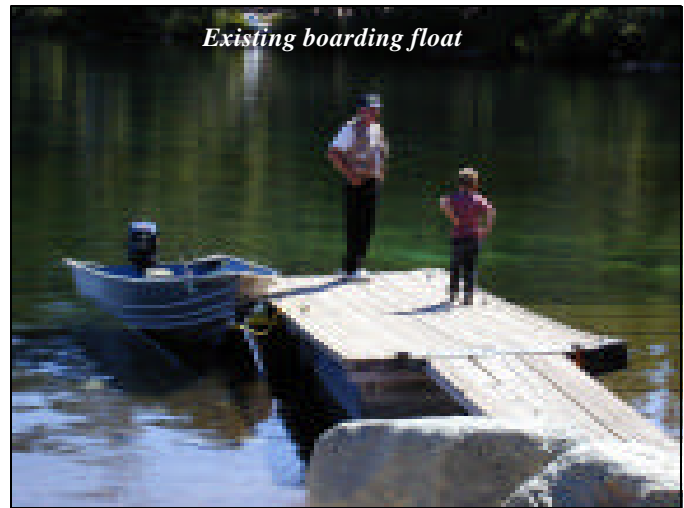
The Boating and Waterways Commission has previously consented to the following grant to the USDA Forest Service for the development of Gold Lake.

In FY 1981/82, a \$300,000 grant was approved for construction of a two-lane boat launching ramp, boarding floats, a parking area, restrooms, and signing.

ENGINEERING CONSIDERATIONS

Proposed Project

Boat launching at the Gold Lake Launching Facility is currently a public safety issue during loading and unloading, due to the fact that the boarding float (located to the left of the boat ramp), does not properly adjust far enough into the lake at low water levels. The boarding float is also unsafe to use in high wind conditions as it becomes displaced from the ramp. In addition, the existing boarding float does not provide barrier-free access.



The proposed project will:

1. Remove the existing two-lane substandard concrete ramp and concrete planks extension, and replace it with a concrete ramp 30 feet wide and 85 feet long. Standard V-grooving will be required for finishing. A cofferdam will be used to allow the boat ramp construction to take place in dry conditions;
2. Construct turnaround at top of ramp;
3. Remove the existing 6' wide by 20' long boarding float, and replace it with a cable guided barrier-free access boarding float, (8' wide by 60' long);
4. Remove existing restroom and install new barrier-free access dual vault restroom;
5. Improve trail from parking lot to new restroom for barrier-free access.

Cost Estimate



Conclusion

There are no particularly difficult or unusual problems associated with this project and it falls within the normal range of practice for design and construction of projects of this type. Therefore, the proposed project is considered feasible from an engineering standpoint at a total estimated cost of \$245,000.

Table 1

Determination of User-Day Value

Variety	"WITHOUT"		"WITH" Project	
	Quality	Points	Quality	Points
Boating	Poor	3	Average	6
Fishing	Poor	5	Average	8
Picnicking	Average	12	Average	12
Waterskiing	Poor	1	Average	3
Swimming	Average	15	Average	15
Camping	Average	8	Average	8
Hiking, Riding, Bicycling	Average	6	Average	6
Enjoying and/or Harvesting				
Wildlife	N/A	0	N/A	0
Scientific-Historic Appreciation	N/A	0	N/A	0
Aesthetics				
Drawdown	Average	30	Average	30
Climate	Good	10	Good	10
Geologic features	Good	10	Good	10
Water clarity	Good	10	Good	10
Vegetative cover	Good	10	Good	10
Other (absence of odor, etc.)	Good	10	Good	10
Base Value	Average	50	Average	50
Value of User Day (in 1967 dollars)*		\$1.80		\$1.88
Value of User Day (in current dollars)		\$8.84		\$9.38

* The points assigned in the table above are user day units of value in 1967 dollars. They can be converted to current user day values simply by multiplying them by the current consumer price index (CPI) using 1967 as the base year. The CPI is a measure of the change in the purchasing power of the dollar since the base year. The current CPI (as of July 1999) with base year 1967 is 499.2.

B/C ratio = PV Benefits/PV Costs = 1.83

ECONOMIC ANALYSIS

The economic justification of any proposed project rests upon a comparison of the benefits and costs attributable to the project. The project is deemed economically feasible when total benefits exceed total costs.

The comparison of benefits to costs that follows takes into consideration the impact of time on the value of these elements, since the value of a dollar is considered to be greater in the present year than in some future year. To compensate for the effect of time, the present value of the benefits and costs generated by the project over its expected life have been computed. These numbers are reported as the benefit to cost (B/C) ratio. The B/C ratio must be greater than unity (1.00) before public investment in a project is justified.

Benefits

The determination of project benefits takes into account the following

factors:

- 1) Demand for (expected use of) the project facilities as measured by the number of user days creditable to the launching facility; and
- 2) The dollar value associated with the expected use of the project.

Total benefit is calculated as the sum of the number of users and the estimated value (in dollars) they receive from that use.

Recreational Demand Analysis

It has been estimated that the proposed improvements to the Gold Lake Boat Launching Facility will permit an estimated 3,500 boat launches each year. Numerous studies have determined that the average party size is three people per boat, therefore, it is expected that 10,500 boaters will use the facility annually.

User-Day Value

As shown in Table 1, and in accordance with guidelines adopted by other public agencies, user-day value is calculated based on the estimated value of general recreation in 1967. Various degrees (good, average, or poor) of both “variety of recreation” and “aesthetic quality”, depending on site conditions, are then assigned to a project. When summed, these point values establish the user-day value in 1967 dollars. They are then converted to current dollars with the aid of the Consumer Price Index.

The value of recreation to boaters using the Gold Lake Boat launching facility has been estimated at \$9.38 per user day – based on projected site conditions.

Total Benefits

Total benefits for each year are determined by multiplying the estimated number of launches by the average party size and the user-day value. Future benefits are then discounted. The sum of present benefits and discounted future benefits is the present value of the project.

Total benefits attributable to the project are presented in Table 2. Benefits attributable to the project are determined by taking the difference between the boater benefits “without” (as the project currently stands) and “with” (post project) columns in Table 2.

Table 2

Net Present Value of Benefits

Year	"WITHOUT"			"WITH"			PRESENT		
	BOATER BENEFITS			BOATER BENEFITS			VALUE		
	Total Launches	User Days	Benefits	Total Launches	User Days	Benefits	Project Benefits	Discount Rate	Benefits
Construction	0	0	\$0	0	0	\$0	\$0	1.00	\$0
1	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.05	43,550
2	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.09	41,680
3	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.14	39,880
4	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.19	38,170
5	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.25	36,520
6	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.30	34,950
7	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.36	33,450
8	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.42	32,000
9	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.49	30,630
10	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.55	29,310
11	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.62	28,050
12	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.70	26,840
13	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.77	25,680
14	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.85	24,580
15	2,000	6,000	53,028	3,500	10,500	98,542	45,514	1.94	23,520
16	2,000	6,000	53,028	3,500	10,500	98,542	45,514	2.02	22,510
17	2,000	6,000	53,028	3,500	10,500	98,542	45,514	2.11	21,540
18	2,000	6,000	53,028	3,500	10,500	98,542	45,514	2.21	20,610
19	2,000	6,000	53,028	3,500	10,500	98,542	45,514	2.31	19,720
20	2,000	6,000	53,028	3,500	10,500	98,542	45,514	2.41	18,870

Total Net Present Value of Benefits: \$592,060

The discount rate being used is 4.5%, this is equivalent to the interest rate being charged by the Department of Boating and Waterways on its public loans. Present value is determined by dividing future benefits by $(1+r)^n$, where r is the discount rate and n is the number of years into the future.

The present value of benefits attributable to the proposed Gold Lake Boat Launching Facility has been estimated to be \$592,060.

Total Costs

The total costs of the project are comprised of both capital and operating costs. Capital costs to be paid by the State will be \$245,000. Additional operating costs are expected to be \$6,000 per year at full operation. Table 3 shows the anticipated operating costs associated with the project over the next 20 years. These costs are assumed to remain constant in real (adjusted for inflation) dollars. The present value of the sum of these costs is \$323,060.

Benefit-Cost Ratio

The B/C ratio is obtained by dividing the total present value of benefits by the total present value of costs. The B/C ratio for the Gold Lake Boat Launching Facility is 1.83. This means that estimated benefits outweigh estimated costs. Therefore, the construction of this project is economically justified.

Financial Considerations

The completed project will be open to all on an equal and reasonable basis. The Forest Service currently does not charge to use the facility.

Table 3

Determination of Present Value of Costs

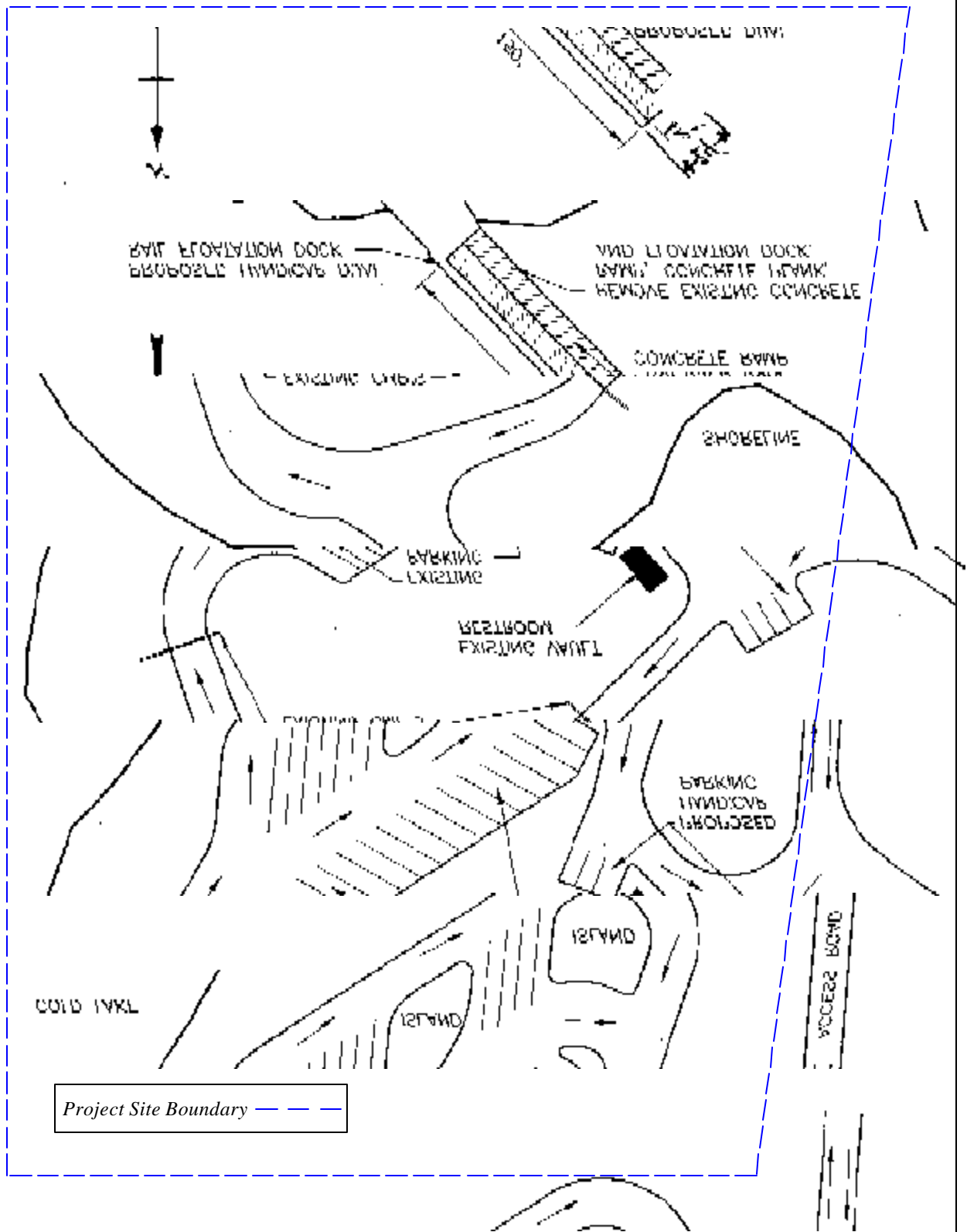
Year	COSTS		PRESENT VALUE	
	Capital Costs	Additional Annual Costs	Discount Factor	Cost
Construction	\$245,000		1.00	\$245,000
1		6,000	1.05	5,740
2		6,000	1.09	5,490
3		6,000	1.14	5,260
4		6,000	1.19	5,030
5		6,000	1.25	4,810
6		6,000	1.30	4,610
7		6,000	1.36	4,410
8		6,000	1.42	4,220
9		6,000	1.49	4,040
10		6,000	1.55	3,860
11		6,000	1.62	3,700
12		6,000	1.70	3,540
13		6,000	1.77	3,390
14		6,000	1.85	3,240
15		6,000	1.94	3,100
16		6,000	2.02	2,970
17		6,000	2.11	2,840
18		6,000	2.21	2,720
19		6,000	2.31	2,600
20		6,000	2.41	2,490

Total Present Value of Costs: \$323,060

The discount rate being used is 4.5%, this is equivalent to the interest rate being charged by the Department of Boating and Waterways on its public loans. Present value is determined by dividing future benefits by $(1+r)^n$, where r is the discount rate and n is the number of years into the future.

RECOMMENDATION

In view of the foregoing demonstration of the project's engineering and financial feasibility and its economic justification, the Department of Boating and Waterways recommends that the Boating and Waterways Commission consent to the grant of \$245,000 to the U.S. Department of Agriculture Forest Service for improvements to the Gold Lake Boat Launching Facility.



GOLD LAKE
BOAT LAUNCHING FACILITY